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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,339	10/16/2001	Nobuko Okada	110891	1640

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EXAMINER

NGUYEN, LAM S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,339

Applicant(s)

OKADA ET AL.

Examiner

LAM S NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10-16-2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 7 provides for the use of a method for manufacturing a function liquid applied substrate by an ink jet recording apparatus but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 10-12 are rejected since the scope of the limitation teaching the method according to claim 7 is unable determined.

2. Claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: The structures of a color filter, an EL element substrate, and a substrate comprising a conducting wiring pattern are not defined. In addition, it is unclear that how the color filter, the EL element substrate, and the substrate comprising a conducting wiring pattern are manufactured.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

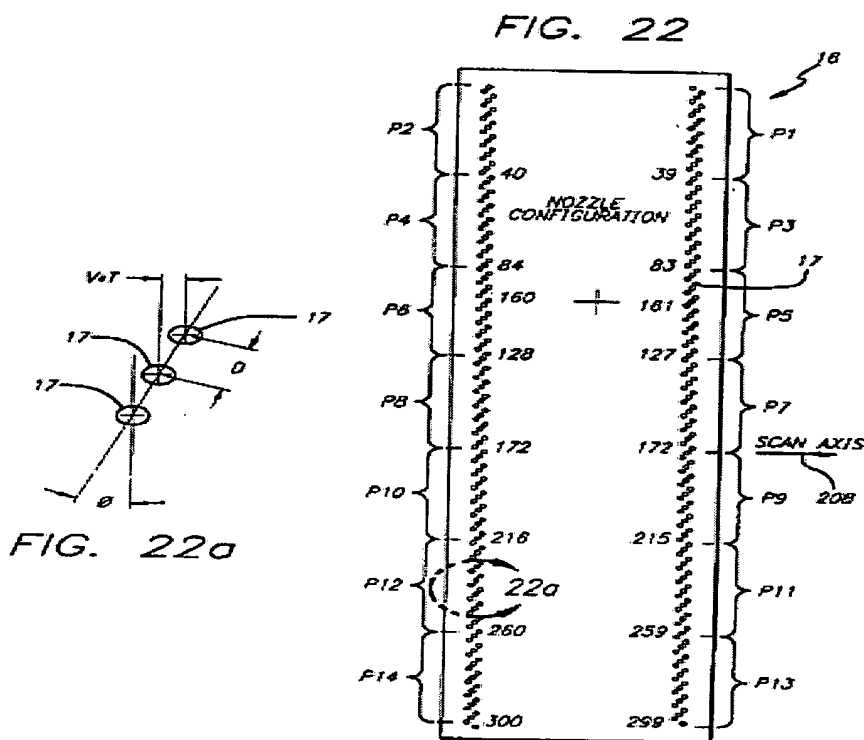
A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being obvious by Courian et al. (US 5946012).

Courian et al. discloses an ink jet recording apparatus comprising a plurality of nozzles for discharging a functional liquid (in term of "ink") (Abstract), wherein said plurality of nozzles is divided into a plurality of groups (in term of "primitive") the number of which is fewer than the number of said nozzles (FIG. 22), and discharge quantity of said functional liquid is charged from said nozzles is controlled group by group (column 23, line 62-65).



Referring to claim 2: wherein said functional liquid is ink (Abstract) (As discussed above, the teaching of manufacturing a color filter is not considered as a limitation).

Referring to claim 5: wherein positions on ink jet head on which said plurality of nozzles is arranged are divided into a plurality of areas, and nozzles belonging to each area are made to belong to a single group (FIG. 22, elements P1-P14).

Referring to claim 6: wherein said ink jet head on which said plurality of nozzles is arranged comprises cavities provided for each of nozzles (FIG. 20, element 142), a reservoir communicating to said cavities and common to said nozzles (FIG. 20, element 132), and a supply port (FIG. 12, element 86) for supplying said functional liquid to said reservoir; and wherein said plurality of groups comprise at least a first group comprising nozzles of said plurality of nozzles positioned close to said supply port, and a second group comprising nozzles of said plurality of nozzles positioned far from said supply port (FIG. 22, nozzles are arranged into three groups based on the distance from the nozzles to the ink supply port).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Courian et al (US 5946012) in view of Nill et al. (US 5069733).

As discussed above, the teaching of manufacturing an EL element substrate is not considered as a limitation. Therefore, the rejection is made as following:

Courian et al. discloses the claimed invention applied to claim 1 as discussed above except wherein said function liquid is a solution of electroluminophor.

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Nill et al. discloses a method of manufacturing the luminescent screen using a printing apparatus and printing inks consisting electroluminophor (in term of "luminescent materials") (column 1, line 46-48).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to replace the functional liquid in the printing apparatus of Courian et al. by electroluminophor to manufacture a luminescent screen as disclosed by Nill et al. (column 1, line 46-48) and as well known in the art, too.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Courian et al (US 5946012) in view of Kaneko et al. (US 6283813).

As discussed above, the teaching of manufacturing a substrate comprising a conducting wiring pattern is not considered as a limitation. Therefore, the rejection is made as following:

Courian et al. discloses the claimed invention applied to claim 1 as discussed above except wherein said functional liquid is an electrically conducting particle dispersion solution.

Kaneko et al. discloses functional liquid is an electrically conducting particle dispersion solution (Abstract: a laminated conductive material is deposited by a printing process to form an electric wiring substrate).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to replace the functional liquid in the printing apparatus of Courian et al. by an electrically conducting particle dispersion solution to manufacture a conducting wiring pattern substrate as taught by Kaneko et al. (Abstract) and as well known in the art, too.

6. Claim 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Courian et al (US 5946012) in view of Komai et al. (US 5266965).

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As discussed above, even though, claim 7 is claimed as a method for manufacturing, there is no step or procedure disclosed. Therefore, the rejection is made as following:

Courian et al. disclosed the claimed invention as discussed above except wherein waveform of a signal for controlling discharge of said functional liquid from said nozzles is regulated for each group.

Komai et al. discloses a waveform of a signal for controlling discharge of said functional liquid from said nozzles is regulated for each group (Abstract: two different driving voltages are applied to two different group of piezoelectric elements).

It would have been obvious for one having ordinary skill in the art at the time the invention was made to add a waveform of a signal for controlling discharge of said functional liquid from said nozzles regulated for each group as disclosed by Komai et al. into the printing apparatus of Courian et al. The reason of doing so is to prevent deterioration of the ink ejection velocity caused by mutual interference of the nozzles of the multi-nozzle printing head when the nozzles are simultaneously driven as taught by Komai et al. (column 1, line 55-63).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Inui et al. (US 6074052) teaches a method of dividing plurality of nozzles into different groups for discharging different group of ink droplets.

Kanaya (US 6302517) discloses a plurality of nozzles grouped into a plurality of blocks based on different areas on a printhead.

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Clark et al. (US 6428134) discloses a method that applying different pulses on different nozzles to produce ink droplets of nominal volume regardless of physical or electrical variations between nozzles.

Mizutani et al. (JP 11-160528) discloses a method for manufacturing a color filter by jetting pixel materials.


Shimoda et al. (JP 10-012377) discloses a method for manufacturing a EL display body by means of ink jet.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BARLOW can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN
August 26, 2002


CRAIG HALLACHER
PRIMARY EXAMINER